8505A/8506A Operating Instructions

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Most 8505A and 8506A operating features share the same descriptions. However, 8506A VAC modes operate differently in several instances. These areas of difference can be identified in the shaded areas on this card. Whenever necessary, refer to the appropriate instruction manual for complete feature descriptions.

POWER ☐ Push on, push off

CAUTION: The rear panel Cal Switch must be off before power is cycled on or off.

DEFAULT STATES

Power-Up or Reset: DMM assumes VDC, 1000V range (manual), auto trigger, filter F0, sample 7, zero feature on (initialized to values stored in Cal Memory), all other features off and respective values lost.

New Function Selected: DMM assumes new function, autoranging, retains previous trigger, filter, sample, and zero settings, turns off other features (but retains respective values).

NOTE: 8506A — selecting between ac volts functions (NORMAL, ENH'D, HI ACCUR) and other functions (VDC, OHMS, ADC) amends this default state. Refer to the Instruction Manual.

Same Function Re-Selected: DMM assumes autoranging, all other features and values retained.

FUNCTION

Selecting any valid new function cancels the previously selected function and places the DMM in the New Function Default State.

8505A/8506A Common Functions

V DC ⎓ ☐ Selects dc volts; five ranges (100 mV, 1V, 10V, 100V, 1000V) available; 6½-digits resolution (7½ on 10V range in Average mode).

A DC ⎓ ☐ Selects dc current; five ranges (100 μA, 1 mA, 10 mA, 100 mA, 1A) available; 5½ digits resolution (6½ on all ranges in Average mode).

OHMS Ω ☐ Selects resistance; eight ranges (10Ω, 100Ω, 1 kΩ, 10 kΩ. 100 kΩ, 1 MΩ, 10 M[illegible] resolution (6½ o[illegible]

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FUNCTION (CONT)

8505A Only Functions

V AC ~ ☐ Selects ac volts; four ranges (1V, 10V, 100V, 1000V) available; 5½ digits resolution (6½ digits on all ranges in Average mode). If True RMS Option -09A is installed, push simultaneously with VDC button for dc-coupled ac volts.

A AC ~ ☐ Selects ac current; five ranges (100 μA, 1 mA, 10 mA, 100 mA, 1A) available; 5½ digits resolution (6½ in four highest ranges with Average mode).

8506A Only Functions

HI ACCUR ☐ Provides maximum ac volts accuracy with 6 second reading time. Push simultaneously with VDC button for dc-coupled ac volts (high accuracy). Eight ranges, 5½ digit resolution.

ENH'D ☐ Selects initial high accuracy measurement, which is used to correct subsequent measurements made at normal mode speed. Push simultaneously with VDC button for dc-coupled ac volts (enhanced). Eight ranges, 5½ digit resolution.

NORMAL ☐ Normal provides fast reading times, but with reduced accuracy. Push simultaneously with VDC button for dc-coupled ac volts (normal). Eight ranges, 5½ digit resolution.

RANGE

☐ **AUTO** Toggles autoranging on (AUTO light on) or off. When entering autorange, a new range is selected only if necessary.

☐ ↑ If autoranging is initially on, pushing this button selects both manual ranging and the next higher range (if available). Once manual ranging is selected, each push selects the next higher range (if available).

☐ ↓ If autoranging is initially on, pushing this button selects both manual ranging and the next lower range (if available). Once manual ranging is selected, each push selects the next lower range (if available).

TRIGGER

☐ **AUTO** Selects auto trigger mode, in which the DMM internally generates a trigger for each reading. SAMPLE light flashes to indicate reading-in-progress.

☐ **MANUAL/ EXTERNAL** Disables auto trigger mode, enables manual trigger mode, and arms external trigger mode. The display is "frozen" and most other controls are not acted on until the next manual (or external) trigger. Each push during manual trigger mode triggers a new reading.

CONTROL

RESET ☐ Establishes Power-Up/Reset Default State. In general, all modes and stored values are lost. Cal Memory entries are not affected.

LCL/RMT ☐ With IEEE-488 Interface: push to change from remote to local, but cannot be used to change from local to remote. With Bit Serial or Parallel Interface: push to toggle between local and remote.

MODIFIERS

EXT REF ☐ Toggles External Reference mode on or off. If mode off since last power-up or reset, push RECALL EXT REF for DMM software number. If mode toggled on after power-up or reset, software number not available.
8506A AC Volts Functions: External Reference mode and software number not available.

LIMITS ☐ Toggles Limits mode on or off while retaining stored limits values. Display = "HI", "LO", or "PASS" in Limits mode.

PEAK ☐ Toggles Peak mode on or off. If mode is on, storage of highest and lowest values is continuously updated. Values retained when mode toggled off. Values re-initialized when mode toggled on.

SAMPLE ☐ Toggles between sample settings 5 and 7. Also, can be used to numerically program any of 18 settings. The samples-per-reading are set as the exponent of 2 (e.g. setting 7 = 2E7 = 128 samples-per-reading).
8506A AC Volts Functions: No sample changes allowed.

FILTER ☐ Toggles between filter mode F (FILTER light off) and F0 (FILTER light on). Also, can be used to numerically program any of five filter modes.
8506A AC Volts Functions: Only F0 or F used. F0 is default setting. F is selected by toggling FILTER.

OFFSET ☐ **(CAL DATE)** Toggles Offset mode on or off while retaining stored offset values. Offset value can be displayed reading (STORE OFFSET) or numeric entry (STORE numerics OFFSET).
(CAL DATE) is used to store or recall six digits signifying the calibration date or identifying the DMM. Refer to Software Calibration.

SCALING ☐ **(CAL COR)** Toggles Scaling mode on or off while retaining stored scaling values. Scaling value can be displayed reading (STORE SCALING) or numeric entry (STORE numerics SCALING).
(CAL COR) is used to store gain corrections or recall uncorrected readings. Refer to Software Calibration.

AVG ☐ Toggles Averaging mode on or off. If mode on, filter and sample are preset for optimum stability: changes are subject to restrictions. Averaging mode also increases display resolution in many instances. Refer to manual.
8506A AC Volts Functions: Averaging enables extended resolution only (1V, 3V, 10V, 30V, 100V, 500V ranges).

MODIFIERS (CONT)

ZERO V DC/Ω ☐

Toggles Zero mode on or off. Use of this button depends on the Calibration mode state.
Cal mode on (AVG/(CAL) light flashes): use button to store into or recall from Cal Memory.
Cal mode off (AVG/(CAL) light not flashing): use button to store into or recall from temporary memory.

MEMORY

STORE ☐

To enter reading as offset, scaling, or limit:

STORE → { OFFSET, SCALING, HI, or LO

To enter numerics as sample, filter, offset, scaling or limit:

STORE → (numerics) → { FILTER, SAMPLE, OFFSET, SCALING, HI, or LO

CE ☐ ± ☐ 7 ☐ 8 ☐ 9 ☐

EXP ☐ . ☐ 4 ☐ 5 ☐ 6 ☐

0 ☐ 1 ☐ 2 ☐ 3 ☐

Numeric entry format: ± XX.XXXX ± EXP X

Display: "?" → (numerics being entered) → Readings, as modified, or HI, LO, or PASS for Limits.

Allowed Numerics:
- none, 0, 1, 2, or 3 → FILTER*
- 0, 1, 2 . . . . 17 → SAMPLE*
- -10^9 to $+10^9$ → OFFSET
- $+10^9$ to $+10^{-9}$, or -10^{-9} to -10^9 → SCALING
- $+10^9$ to -10^9 → HI, or LO

*8506A AC Volts Functions: only F or F0 allowed; no sample change allowed.

MEMORY (CONT)

RECALL ☐

RECALL → { SAMPLE, FILTER, OFFSET, SCALING, ZERO, or EXT REF; HI or LO → LIMITS or PEAK

HI ☐ **LO** ☐

Used for store or recall of limits values and recall of peak values.

DISPLAY RESPONSES

HI—Y.Y.Y.	Power Up/Reset Display. ("Y" identifies software)
CXXXXX	("X" identifies options by number) "8" = Isolator "A" = Thermal True RMS Converter (8506A)
HHHHHH	Flashes for input exceeding full scale.
LLLLLL	Flashes for input less than underrange point (8506A AC Volts Functions only).
H	"H" flashes in exponent field if 30V or more at inputs during Scaling, Ext Ref, Offset, or Limits.
HI,LO,PASS	Limits display

INDICATOR RESPONSES

Most indicators are either on or off, as determined by the respective function or mode pushbutton. The following indictors behave somewhat differently:

AVG/(CAL)	On steady if Averaging mode on, or flashing if Calibration mode on. Otherwise, off.
EXT, SCALE	Mutually exclusive modes.
SAMPLE	Flashes to show reading in progress.

ERROR CODES

	Momentary Errors
Error 0	VDC or OHMS zero error
Error 1	Store during overrange error
Error 6	Display overflow error
Error 7	Excessive (>20V dc) External Reference input
Error 8	Faulty Controller module
Error A	8506A: Wrong pushbutton usage in ac volts
Error b	Wrong pushbutton usage in Calibration mode
Error C	Invalid pushbutton usage
Error d	Calibration Memory faulty or not installed
Error F	Calibration Memory checksum error
Error H	Ohms connection problem
	Latching Errors
Error 0	System error
Error 2	Filter module faulty or not installed
Error 3	DC Signal Conditioner module faulty/not installed
Error 4	Ohms or current error (overvoltage at inputs)
Error 5	A/D Converter faulty or not installed
Error 9	Function selection error
Error E	Module configuration error

FRONT PANEL SOFTWARE CALIBRATION

Allow for a 2-hour multimeter warmup. Position the rear panel Cal Switch on for software calibration. This switch must be returned to off when calibration is complete.
CAUTION: The Cal Switch (rear panel) must be off before cycling power on or off.

DC Volts Zero Corrections

1. Apply a high quality, low-thermal short between SENSE HI and LO. Allow time for thermal dissipation.
2. Select: VDC, 100 mV range, slow filter (FILTER light on).
3. To store the reading as the zero correction, push ZERO VDC/Ω button twice (ZERO goes off, then on).
4. Select the next higher range.
5. Repeat steps 3 and 4 until each of the five ranges is zeroed.

Ohms Zero Corrections

1. Apply a high quality, 4-terminal short to the inputs.
2. Select: OHMS, 10Ω range, slow filter (FILTER light on).
3. To store the reading as the zero correction, push the ZERO VDC/Ω button twice (ZERO light goes off, then on).
4. Select the next higher range.
5. Repeat steps 3 and 4 until all eight ranges are zeroed.

Gain Corrections

The following procedure applies to all functions and ranges:
1. Select the function and range to be calibrated.
2. Select slow filter (FILTER light on).
3. Using an appropriate source, apply an input as specified in the Gain Correction Parameter table.
4. Push: STORE (numerics for input) (CAL COR).
5. Repeat these steps for each range and function.

NOTE: In VDC and ADC, separate corrections may be stored for positive and negative inputs.

Software Calibration Procedures (Calibration Mode On)

Enter zero correction:	STORE	ZERO VDC/Ω	
Enter gain correction:	STORE	(numerics)	(CAL COR)
Enter date:	STORE	(1-6 digits)	(CAL DATE)
Recall zero correction:	RECALL	ZERO VDC/Ω	
Recall reading:	RECALL	(CAL COR)	
Recall date:	RECALL	(CAL DATE)	

Software Calibration Procedures (Calibration Mode Off)

Enter zero correction:	STORE	ZERO VDC/Ω	
Recall zero correction:	RECALL	ZERO VDC/Ω	
Recall reading:	RECALL	LO	(CAL COR)
Recall date:	RECALL	LO	(CAL DATE)

NOTE: Recall of zero corrections is defined by the function selected and the state of Cal mode. Refer to the Instruction Manual. Recalled readings are uncorrected.

SOFTWARE CALIBRATION
Calibration Points

	FUNCTION	ZERO	GAIN (+)	GAIN (-)	AC GAIN
8505A	DC Volts	X	X	X	
	DC Amps		X	X	
	Ohms	X	X		
	AC Volts				
	Option -01				X
	Option -09A				
	VAC				X
	VAC+VDC				X
	AC Amps				X
8506A	DC Volts	X	X	X	
	DC Amps		X	X	
	Ohms	X	X		
	AC Volts				
	HI ACCUR/VA2				X
	HI ACCUR+VDC/C2				X

Gain Correction Parameters

NOTE: Recommended correction values are shown in parentheses for each range. Any correction value from 60% of range to full scale may be used.

8505A/8506A	
DC Volts	
100 mV	(190 mV)
1V	(1.9V)
10V	(19V)
100V	(120V)
1000V	(1000V)
DC Amps	
100 μA	(190 μA)
1 mA	(1.9 mA)
10 mA	(10 mA)
100 mA	(100 mA)
1A	(1.0A)
Ohms	
10Ω	(20Ω)
100Ω	(200Ω)
1 kΩ	(2 kΩ)
10 kΩ	(20 kΩ)
100 kΩ	(200 kΩ)
1 MΩ	(2 MΩ)
10 MΩ	(20 MΩ)
100 MΩ	(100 MΩ)

8505A Only	
AC Volts	(Note 1)
1V	(2V)
10V	(19V)
100V	(100V)
1000V	(900V)
AC Amps	(Note 2)
100 μA	(200 μA)
1 mA	(2.0 mA)
10 mA	(19 mA)
100 mA	(150 mA)
1A	(1A)

8506A Only	
AC Volts	(Note 3)
100 mV	(120 mV)
300 mV	(390 mV)
1V	(1.2V)
3V	(3.9V)
10V	(12V)
30V	(35V)
100V	(120V)
500V	(500V)

Notes:

1. *Gain correction entered at 1 kHz, checked at 10 kHz, 50 kHz, 100 kHz (Averaging Converter Option -01) or at 100 kHz, 500 kHz, 1 MHz (True-RMS Converter Option -09A).*
2. *Gain correction entered at 1 kHz. Actual value must be verified at source output.*
3. *Gain correction entered at 1 kHz, checked at 10 kHz and 100 kHz.*

8505A/8506A Systems Multimeter Programming Card

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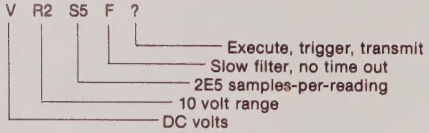
NOTE: Power-up or reset default = V, R4, S7, F0, T0, O0, P0, X0, U0, B0, D0, L0, Y0, M0, M2, Q0, W.

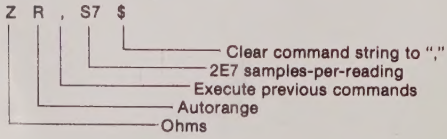
Programming commands and responses are generally the same for the 8505A and the 8506A. Some differences do occur when using 8506A AC Volts functions. These differences can be identified in the shaded areas on this card. Full explanations of the differences can be found in the 8506A Instruction Manual.
Commands can usually be used with any of the remote interfaces (-05, -06, or -07). Exceptions are noted in parentheses.

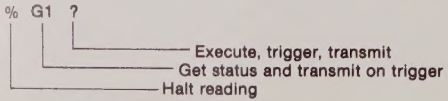
PROGRAMMING FORMAT

NOTE: Command characters may be programmed in any logical sequence. The command string (maximum length — 31 characters) is buffered until a termination character is sent. An immediate character can be sent at any time and does not require a termination character.

Typical Command Strings







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TERMINATION CHARACTERS

,	Execute previous command string
?	Execute, trigger, and transmit reading
@	Execute and trigger — interrupt when ready
$	Clear the command string buffer

IMMEDIATE CHARACTERS

*	Reset
%	Halt
#	Go to local, lockout remote (Option -06 or -07)
!	Enter high speed reading mode (Option -05 or -07)
/	Toggle the parallel interface mode

COMMAND CHARACTERS

Function Commands

V	DC Volts
VA	AC Volts (8506A: AC Volts Normal)
C	DC Coupled AC Volts (8506A: AC+DC Normal)
I	DC Amps
IA	AC Amps (8505A only)
Z	Ohms
Z1	Fast Ohms
	8506A Additional AC Volts Commands
VA1	AC Volts (Enhanced)
VA2	AC Volts (High Accuracy)
C1	DC Coupled AC Volts (Enhanced)
C2	DC Coupled AC Volts (High Accuracy)

Range Commands

	V	VA, C (8505A)	VA/VA1/VA2 C/C1/C2 (8506A)	I, IA (8505A)	Z, Z1
R	Auto	Auto	Auto	Auto	Auto
R0	100 mV	Auto	100 mV	100 μA	10Ω
R1	1V	1V	300 mV	1 mA	100Ω
R2	10V	10V	1V	10 mA	1 kΩ
R3	100V	100V	3V	100 mA	10 kΩ
R4	1000V	1000V	10V	1A	100 kΩ
R5	Auto	Auto	30V	Auto	1 MΩ
R6	Auto	Auto	100V	Auto	10 MΩ
R7	Auto	Auto	500V	Auto	100 MΩ

Samples-per-Reading Commands

S0 ⋮ S17 "S", followed by one or two digits (0-17) specifies the exponent of 2. For example, "S7" specifies 2E7, or 128, samples-per-reading.

8506A AC Volts Functions: no sample commands allowed.

COMMAND CHARACTERS (CONT)

Filter Commands

F	Slow, no time out, FILTER light on
F0	Fast, no time out, FILTER light off
F1	Filter bypass, FILTER light off
F2	Slow, 500 ms time out, FILTER light on
F3	Fast, 50 ms time out, FILTER light off

8506A AC Volts Functions: F or F0 only allowed.

Trigger Commands

T	Continuous readings, line synchronized
T0	Single reading, line synchronized
T1	Continuous readings, line asynchronous
T2	Single reading, line asynchronous

Averaging Commands

O	Average mode enabled
O0	Average mode disabled

8506A AC Volts Functions: Average mode enables extended resolution only.

Offset Commands

P	Offset mode enabled
P0	Offset mode disabled

External Reference/Scaling Commands

X	External Reference mode enabled
X0	External Reference and Scaling modes disabled
X1	Scaling mode enabled

8506A AC Volts Functions: External Reference mode not allowed.

Limits/Peak Commands

U	Activate limits testing (limits set with "KNU", "KNL")
U0	Disable limits testing and peak value storage
U1	Activate peak value storage

Control Commands

B	Single byte binary
B0	Single character ASCII
B1	Double byte binary (16 bit parallel)
B2	Double character ASCII (16 bit parallel)
D	Disable front panel display (creates local lockout)
D0	Activate front panel display
L	Activate local lockout
L0	Deactivate local lockout
Y	Echo capability on (Full Duplex)
Y0	Echo capability off (Half Duplex)
J	Suppress line feed character
J0	Transmit line feed character
J1	Suppress output of readings
M	Inhibit Cal Memory gain correction factors
M0	Enable Cal Memory gain correction factors
M1	Inhibit zero values
M2	Enable zero values

COMMAND CHARACTERS (CONT)

External Trigger Commands

Q	External trigger, interrupt when ready
Q0	Disable external trigger
Q1	External trigger, transmit reading

External Trigger Delay Commands

W	No delay	W8	533.2 ms
W0	2.083 ms	W9	1.066s
W1	4.166 ms	W10	2.133s
W2	8.332 ms	W11	4.266s
W3	16.66 ms	W12	8.532s
W4	33.33 ms	W13	17.06s
W5	66.66 ms	W14	34.13s
W6	133.3 ms	W15	68.26s
W7	266.6 ms		

Memory Store Commands

K	Store previous reading as offset
K0	Store previous reading as dc volts zero
K1	Store previous reading as ohms zero
K2	Store previous reading as scaling factor
K3	Store the following characters (maximum of 15) as the error response message
KND	Store the following digits (maximum of 6) as calibration date or instrument identifier
KNG	Store the gain correction factor for this range
KNP	Store the following numeric entry as offset
KNX	Store the following numeric entry as scaling factor
KNU	Store the following numeric entry as upper limit
KNL	Store the following numeric entry as lower limit
	Caution: Refer to manual before using "K4G1".
K4G1	Clear all Calibration Memory entries

Memory Recall Commands

G	Recall previous reading and transmit on trigger
G1	Recall status and transmit on trigger (see Responses)
G2	Recall configuration and transmit (see Responses)
G3	Recall input selector status ("0"=rear, "1"=front)
G4	Recall calibration date, or instrument identifier
G5	Recall Calibration mode status ("0"=off, "1"=on)
G0	Recall dc zero value and transmit on trigger
G6	Recall ohms zero value and transmit on trigger NOTE: Response for "G0" or "G6" depends on the function selected and the Calibration mode state. Refer to the Instruction Manual.
GNP	Recall offset and transmit on trigger
GNR	Recall external reference value and transmit on trigger NOTE: "GNR" returns the software version number if "X" has not been used since the last power-up or reset.
GNX	Recall scaling factor and transmit on trigger
GNU	Recall upper limit and transmit on trigger
GNL	Recall lower limit and transmit on trigger
GNQ	Recall lowest peak value and transmit on trigger
GNW	Recall highest peak value and transmit on trigger

RESPONSES

ASCII Measurement Responses

Always in units of volts, ohms, or amps. Typical response:
"+19.26753E+3 ⟨CR⟩⟨LF⟩"

NOTE: Additional digit returned for some ranges in Averaging mode. For Binary Measurement Responses, refer to manual.

Error Response

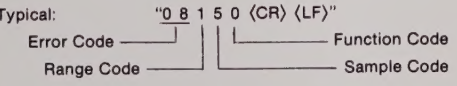
Response of an error message (programmed with "K3" since last power-up or reset), or a 0 (if no "K3" entry made) indicates error in measurement. "G1" must then be used to identify the error.

Limit Responses

0	Reading within limits (as set with "KNU", "KNL")
1	Reading exceeds upper limit
-1	Reading exceeds lower limit
2	Error in measurement NOTE: "2" returned if no "K3" error message programmed since last power-up or reset. Otherwise, error message returned for limit error.

Status Response ("G1")

Typical: "0 8 1 5 0 ⟨CR⟩ ⟨LF⟩"



Error Codes (* = latching error)

00	No error
06	System error *
08	Remote command string error
09	Remote overrange error
10	Zero error (dc volts or ohms)
11	Store during overrange error *
12	Filter module faulty or not installed *
13	Signal Conditioner module faulty or not installed *
14	Excessive voltage present at inputs (ohms or current) *
15	A/D Converter faulty or not installed *
16	Numeric display overflow
17	Excessive external reference input (>20V)
18	Controller module faulty or not installed
19	Invalid function selection *
23	Calibration Memory error
24	Module configuration error *
25	Check sum error
27	Ohms input error

RESPONSES (CONT)

Range Codes

	V	VA, C (8505A)	VA/VA1/VA2 C/C1/C2 (8506A)	I, IA (8505A)	Z, Z1
0	100 mV		100 mV	100 μA	10Ω
1	1V	1V	300 mV	1 mA	100Ω
2	10V	10V	1V	10 mA	1 kΩ
3	100V	100V	3V	100 mA	10 kΩ
4	1000V	1000V	10V	1A	100 kΩ
5			30V		1 MΩ
6			100V		10 MΩ
7			500V		100 MΩ

Sample Codes

	Samples-per-reading
0	1
1	2
2	4
3	8
4	16
5	32
6	64
7	128 and Higher

8506A AC Volts: No sample change allowed. Sample codes 0, 1, 2 are therefore used with Function codes 1 or 5 to define the ac volts mode. Use the following table:

8506A AC VOLTS MODES			
Function Code	Sample Code		
	0	1	2
1	VA	VA1	VA2
5	C	C1	C2

Function Codes

0	DC Volts (V)
1	AC Volts: 8505A - VA
2	DC Amps (I)
3	AC Amps. (IA - 8505A)
4	Ohms (Z)
5	AC+DC Volts: 8505A - C
7	Function not defined

Configuration Response ("G2")

8 5 0 5 A 1 2 3 : D F C 1 2 3 4 5 6 7 8 9 A

- Model Number
- Special number
- DC Signal Conditioner
- Active Filter
- A/D Converter
- Averaging AC Converter (Option -01)
- Ohms Converter (Option -02A)
- Current Converter (Option -03)
- (not used, always = "—")
- IEEE-488 Interface (Option -05)
- Bit Serial Interface (Option -06)
- Parallel Interface (Option -07)
- Isolator
- True-RMS Converter (Option -09A)
- Thermal True-RMS Converter

("—" used for any module not installed)

REMOTE SOFTWARE CALIBRATION

Allow for a 2-hour multimeter warm-up. Position the rear panel Cal Switch on for software calibration. This switch must be returned to off when calibration is complete.

CAUTION: The Cal Switch (rear panel) must be off before cycling power on or off.

DC Volts Zero Corrections

1. Apply a high quality, low thermal short across SENSE HI and LO inputs. Allow time for thermal dissipation.
2. Program dc volts, 100 mV range, slow filter ("VR0F2").
3. Trigger the DMM and allow the reading to be returned.
4. Program "K0?" (store previous reading as dc volts zero) and allow the reading to be returned.
5. Repeat steps 3 and 4 for each higher range (R1 - R4).

Ohms Zero Corrections

1. Apply a high quality 4-terminal short to the inputs.
2. Program ohms, 10Ω range, slow filter ("ZR0F2").
3. Trigger the DMM and allow the reading to be returned.
4. Program "K1?" (store previous reading as ohms zero) and allow the reading to be returned.
5. Repeat steps 3 and 4 for each higher range (R1-R7).

Gain Corrections

The following general procedure applies to all functions and ranges:

1. Program the appropriate range and function, with slow filter enabled (e.g. "VR0F2").
2. Using an appropriate source, apply an input as specified in the Gain Correction Parameter table.
3. Trigger the DMM and allow the reading to be returned.
4. Program "KNG (source value) ?".
5. Repeat these steps for each range and function to be calibrated.

NOTE: In dc volts (V) and dc current (I), separate corrections may be stored for positive and negative inputs.

Software Calibration Procedures

Enter gain correction:	"KNG (source value) ?"
Enter date:	"KND (1-6 digits) ?"
(Cal mode must be on to enter gain correction or date)	
Enter zero correction:	"K0?" or "K1?"
Recall zero correction:	"G0?" or "G6?"
Inhibit/Enable zero corrections:	"M1?"/"M2?"
Inhibit/Enable gain corrections:	"M?"/"M0?"
Recall date:	"G4?"

NOTE: Zero correction values recalled are defined by the function selected and the state of Cal mode. Refer to the Instruction Manual.